

What is claimed is:

1. A ferrule heating apparatus configured to allow one end side of an optical fiber to be inserted into an optical fiber insertion through hole being provided on a ferrule, and to heat the ferrule while having a thermosetting adhesive agent between an inner peripheral surface of the optical fiber insertion through hole and the optical fiber, and thereby to adhere the optical fiber and the ferrule together, the ferrule heating apparatus comprising:
 - a thermally conductive holder having a plurality of ferrule housing portions for aligning and housing the ferrules;
 - a holder heating unit configured to support and heat the holder; and
 - a control unit configured to supply electricity to the holder heating unit and to control a heating temperature of the holder heating unit, the control unit being disposed separately from the holder heating unit.
- 15 2. The ferrule heating apparatus according to claim 1, wherein the holder and holder heating unit are inclinable with respect to a horizontal plane.
3. The ferrule heating apparatus according to claims 1 or 2,
 - 20 wherein the holder is configured to be freely fitted to and detached from the holder heating unit, and
 - the holder is changeable in accordance with any of an aspect of the ferrule and an aspect of a connector for connecting an optical fiber supported by the ferrule.
- 25 4. The ferrule heating apparatus according to claims 1 or 2, wherein the holder further comprises a thrusting mechanism configured to align the ferrule for retention such that a surface to be heated of the ferrule contacts a ferrule heating surface of the ferrule housing portion.
- 30 5. The ferrule heating apparatus according to claim 4,
 - wherein the ferrule housing portion includes a ferrule position

regulating portion having a plane intersecting with the ferrule heating surface;

the thrusting mechanism includes an elastic member configured to energize and press the ferrule in a direction of the ferrule position regulating portion; and

- 5 the elastic member has a curved surface being curved such that a approach degree of a tip end side of the elastic member to the ferrule heating surface grows more as the elastic member approaches the ferrule position regulating portion.

10 6. The ferrule heating apparatus according to claim 4,

wherein the ferrule housing portion includes a ferrule position regulating portion having a plane intersecting with the ferrule heating surface;

the thrusting mechanism includes a thrusting portion provided with elasticity and configured to energize and press the ferrule in a direction of the 15 ferrule location regulating portion; and

the thrusting portion has a curved surface configured such that the thrusting portion becomes more distant from the ferrule position regulating portion as a tip portion of the thrusting portion approaches the ferrule heating surface, and that the tip portion pressurizes the ferrule.

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7. A method of adhering an optical fiber and a ferrule applicable to a combination of a plurality of ferrules and a plurality of optical fibers, in which one end side of each of the optical fibers is inserted into an optical fiber insertion through hole provided on each of the ferrules, the method comprising:

25 injecting a thermosetting adhesive agent between an inner peripheral surface of each of the optical fiber insertion through holes and each of the optical fibers; and

heating the ferrules for a given time period by inclining the ferrules such that opposite ends to ends where the optical fibers extends out of the 30 ferrules are placed lower.

8. The method of adhering an optical fiber and a ferrule according to claim 7,

after the step of heating the ferrules for a given time period by inclining the ferrules, the method further comprising:

injecting the thermosetting adhesive agent additionally to supplement a decrease in the volume of the thermosetting adhesive agent attributable to
5 the heating; and

hardening the thermosetting adhesive agent by setting the ferrules horizontal and heating the ferrules.